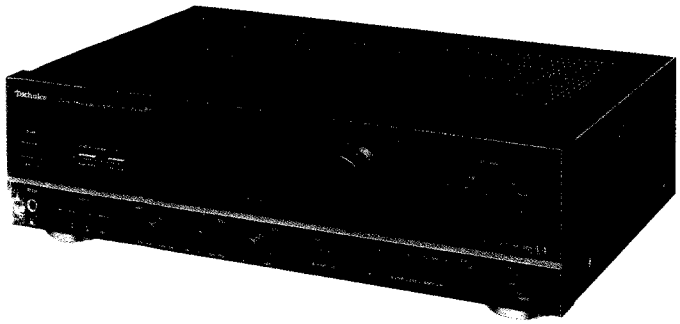
Service Manual

Amplifier

Stereo Integrated Amplifier

SU-V470



Color

(S)	..... Sliver Type
(K)	..... Black Type

Area

Country Code	Areas	Color
(E)	Continental Europe	(K) (S)
(EB)	Great Britain	(K) (S)
(EG)	F.R. Germany & Italy	(K) (S)

SPECIFICATIONS

(DIN 45 500)

20 Hz~20 kHz continuous power output
both channels driven 2 × 45 W (8 Ω)
1 kHz continuous power output
both channels driven (THD: 1 %) 2 × 60 W (8 Ω)
2 × 85 W (4 Ω)
63 Hz~12.5 kHz continuous power output
both channels driven (0.7 %) 2 × 55 W (8 Ω)
2 × 75 W (4 Ω)
Total harmonic distortion (Power Amp Direct input)
rated power at 20 Hz~20 kHz 0.005 % (8 Ω)
rated power at 1 kHz 0.0009 % (8 Ω)
0.002 % (4 Ω)
half power at 20 Hz~20 kHz 0.005 % (8 Ω)
half power at 1 kHz 0.0009 % (8 Ω)
0.002 % (4 Ω)
Intermodulation distortion
rated power at 50 Hz: 7 kHz = 4:1, SMPTE, 8 Ω 0.007 %
Residual hum and noise 0.2 mV
Damping factor 60 (8 Ω), 30 (4 Ω)
Headphones output level and impedance 540 mV/330 Ω
Load impedance
A or B 4 Ω~16 Ω
A and B 8 Ω~16 Ω
Input sensitivity and impedance
PHONO MM 2.5 mV/47 kΩ
PHONO MC 170 μV/220 Ω
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 150 mV/22 kΩ
POWER AMP DIRECT 1 V/18 kΩ
Phono maximum input voltage (IHF '66, 1 kHz, RMS)
MM 160 mV
MC 12 mV
S/N
rated power (4 Ω)
PHONO MM 77 dB (IHF '66: 83 dB)
PHONO MC 64 dB (IHF '66: 64 dB, S=250 μV)
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
97 dB (IHF '66: 100 dB)
POWER AMP DIRECT 106 dB (IHF '66: 115 dB)
−26 dB power (4 Ω)
PHONO MM 76 dB
PHONO MC 63 dB
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 84 dB
50 mW power (4 Ω)
PHONO MM 75 dB
PHONO MC 63 dB
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 78 dB
Frequency response
PHONO MM RIAA standard curve
±0.8 dB (30 Hz~15 kHz)
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
3 Hz~100 kHz (+0, −3 dB)
+0 dB, −0.2 dB (20 Hz~20 kHz)
POWER AMP DIRECT 2 Hz~120 kHz (+0, −3 dB)
+0 dB, −0.2 dB (20 Hz~20 kHz)
Tone controls
BASS 50 Hz, +10 dB, −10 dB
TREBLE 20 kHz, +10 dB, −10 dB
Loudness control (volume at −30 dB) 50 Hz, +9 dB
Output voltage
TAPE 1, TAPE 2/DAT REC OUT 150 mV
Channel balance, AUX 250 Hz~6,300 Hz ±1 dB
Channel separation, AUX 1 kHz 50 dB

■ GENERAL

Power consumption 450 W
Power supply
For Great Britain AC 50 Hz/60 Hz, 240 V
For others AC 50 Hz/60 Hz, 220 V
Dimensions (W × H × D) 430 × 125 × 320 mm
(16-15/16" × 4-15/16" × 12-5/8")
Weight 8.0 kg (17.6 lb.)

Notes:
1. Specifications are subject to change without notice.
2. Weight and dimensions are approximate.
3. Total harmonic distortion is measured by the digital spectrum analyzer.

Technics

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■ BEFORE REPAIR AND ADJUSTMENT

(1) Turn off the power supply. Using a 10Ω, 10W resistor, shortcircuit both ends of power supply capacitors (C705,C706)in order to discharge the voltage.

(2) Before turning on the power switch of the unit.

A. Connect the voltage controller to the primary side.

B. Connect the AC ampere meter to the primary side or connect the DC voltage meter to the "±B" circuit of the secondary side.

C. Turn the VR of ICQ (VR451 and VR452) to minimum (counterclockwise).

D. After setting the output to zero of the voltage contoller,turn on the power switch of the unit. And increase the output of voltage controller gradually. Then, check carefully whether the current value of primary side become more than following value or whether the DC voltage of secondary side is increasing slowly.

E. If the value of current is increasing unusually or the DC voltage is not increasing,lower the output level of voltage contoller immediately.

● The current value of the primary side at no signal. (Confirm the power supply voltage of each area and provided voltage of the unit.)

Power supply voltage		AC 220 V	AC 240 V
Consumed current	50 Hz	60~240 mA	55~220 mA
	60 Hz	56~227 mA	52~208 mA

■ PROTECTION CIRCUITRY

The protection circuitry of the amplifier may have operated if either of the following conditions is noticed:

● No sound is heard when the power is turned on.

● Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted" , or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlined below:

1.Turn off the power.

2.Determine the cause of the problem and correct it.

3.Turn on the power once again.

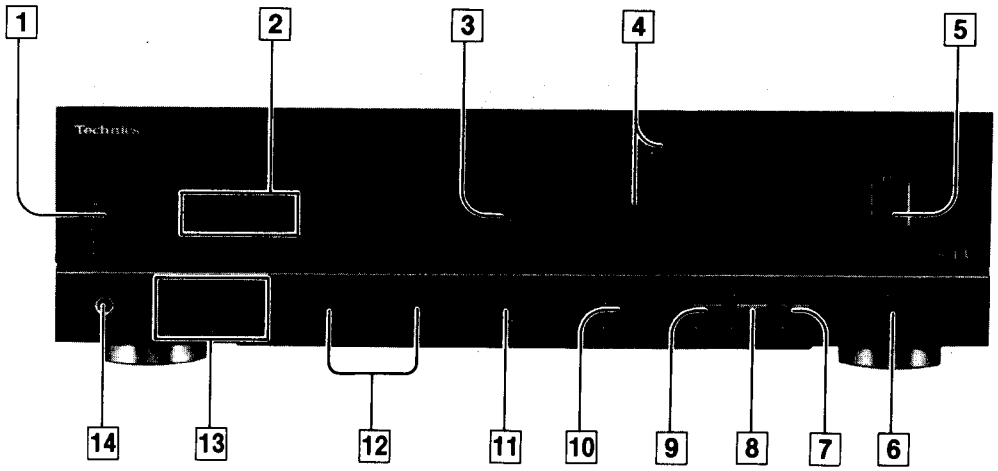
Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ ACCESSORY

•AC power supply cord		1
(SFDAC05E03)	For [E] and [EG] areas.	
(SJA193)	For [EB] area only.	

■ LOCATION OF CONTROLS



1 Power switch (power)

2 Operation indicators (amplifier operation monitor)

This indicator illuminates to indicate the operating condition of this unit.

voltage control:

When the power is switched ON, this indicator illuminates when the unit is in the operation condition.

current drive:

When the power is switched ON, this indicator illuminates after about 4 seconds when the unit is in the operation condition.

If an abnormal condition in the circuitry is detected, such as DC voltage appearing in the output, or a short-circuit of the positive (+) and negative (−) wires from the speaker terminals, the protection circuit functions and this indicator does not illuminate.

3 Power amplifier direct switch (power amp direct)

This switch is used to listen to the sound from a component connected to the "POWER AMP DIRECT" terminals.

When this switch is pressed inward to the "on" position, a superior level of tone quality can be obtained, because the signals from the component connected to the "POWER AMP DIRECT" terminals are sent directly to the volume control and power amp section of this unit. The mode selector, loudness switch, balance control and tone control circuit are bypassed.

4 Volume control/indicator (volume)

There are two types of volume scale indications: one for when the power amplifier direct switch is OFF, and one for when it is ON (Indicator will illuminate.).

5 Input selector (input selector)

This selector is used to select the sound source to be heard, such as a disc, radio broadcast, etc.

6 Recording output selector (rec selector)

This selector is used to select the sound source to be recorded by the connected tape deck 1 and/or tape deck 2 (or DAT).

7 Phono cartridge selector (phono selector)

This selector should be set to the position which corresponds to the type of cartridge used on the turntable.

8 Mode selector (mode)

This selector is used to select stereo or monaural operation.

9 Loudness switch (loudness)

This switch is used when listening to music at a low volume level. Auditory perception of sound in the low frequency range falls off at low volume, but when the switch is set to the "on" position, this deficiency is compensated for, so that the full impact of the musical performance can be enjoyed.

10 Tone control switch (tone control)

This switch is used to turn the tone control circuit (bass, treble) on or off.

11 Balance control (balance)

This control is used to adjust the left/right volume balance.

12 Tone controls (bass/treble)

The bass control is used to adjust the low-frequency sound range, and the treble control is used to adjust the high-frequency sound range.

13 Speaker selectors (speakers)

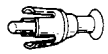
These selectors are used to turn the speaker systems on and off.

14 Headphones jack (phones)

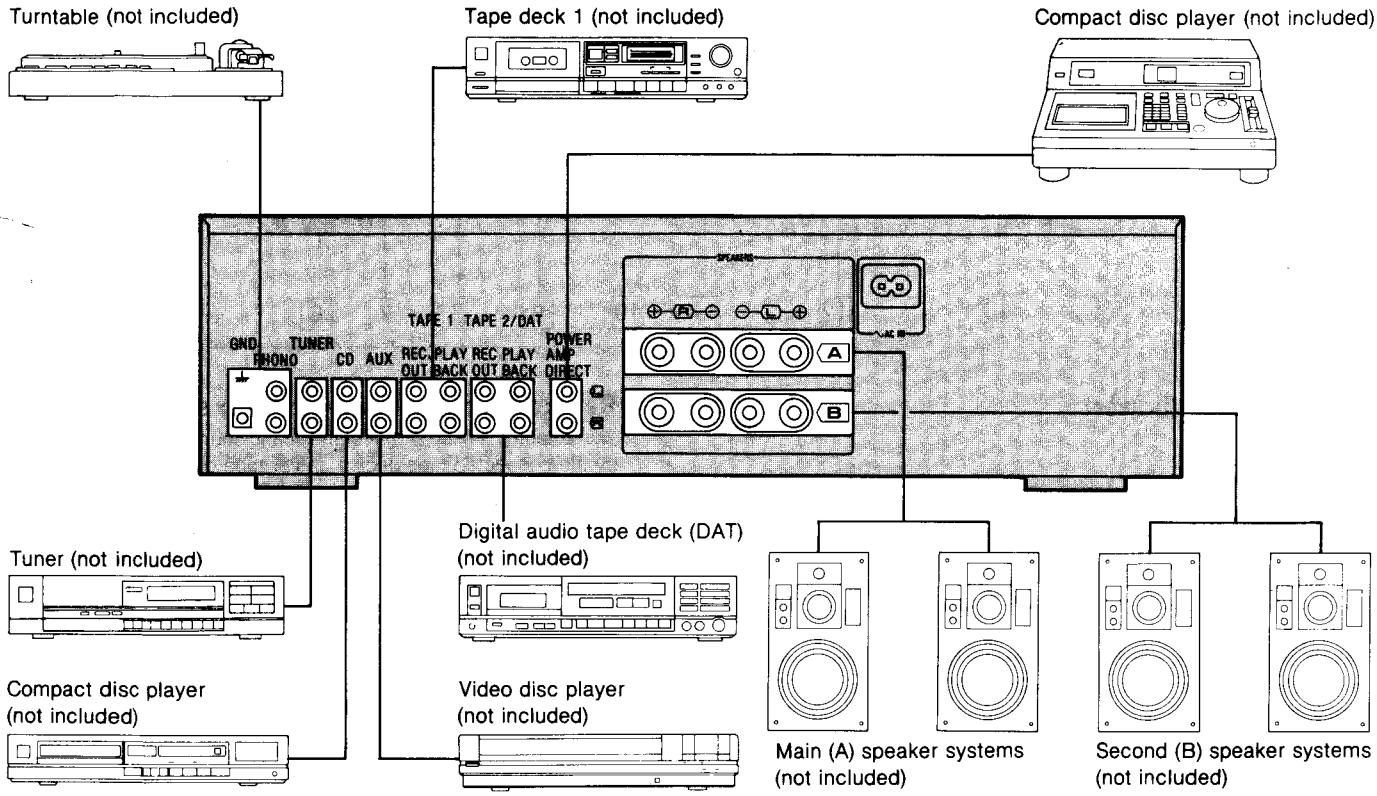
■ CONNECTIONS

Using the short-circuit pins (included)

Shorting pins are inserted into the "PHONO" terminals to reduce noise. Remove the pins before connecting a turntable and reinsert the pins if the turntable is later disconnected. Never connect a shorting pin to a "REC OUT" terminal or any terminal other than those above.



System configurations



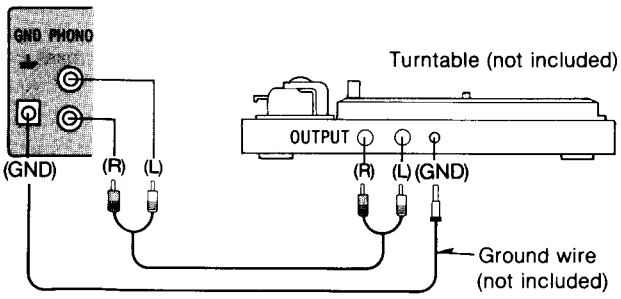
***Phono input capacitance is about 270 pF for EG area (about 100 pF for other areas).**

To connect to each terminals

Make connections to each component in the system by using stereo connection cables (not included).

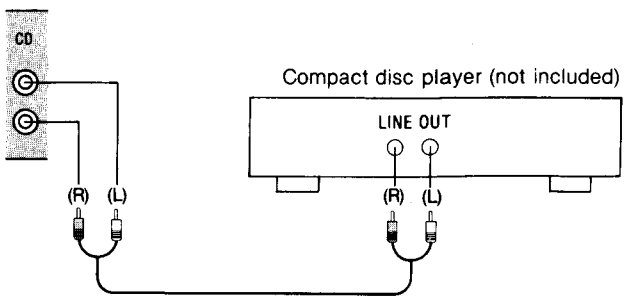
"PHONO" terminals

Connect a turntable. See "Using the short-circuit pins", above.



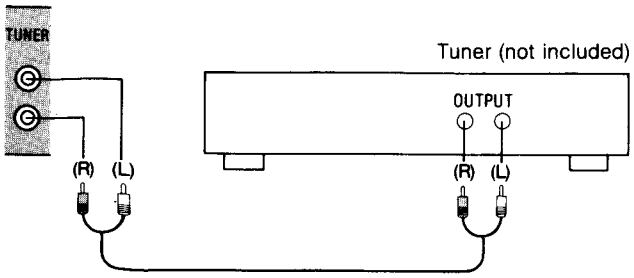
"CD" terminals

Connect a compact disc player.



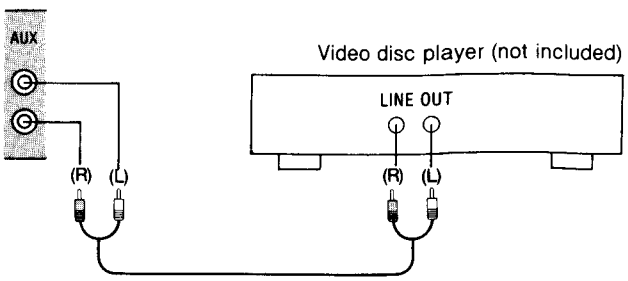
"TUNER" terminals

Connect a tuner.



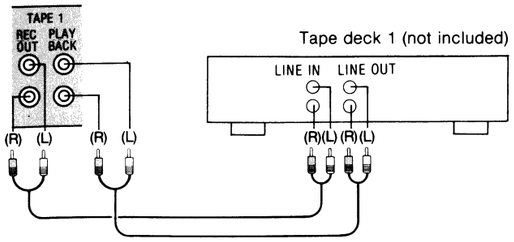
"AUX" terminals

Connect a component such as a video disc player (audio only connectable), etc.



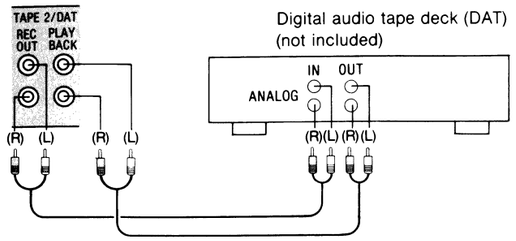
"TAPE 1" terminals

Connect a first tape deck.



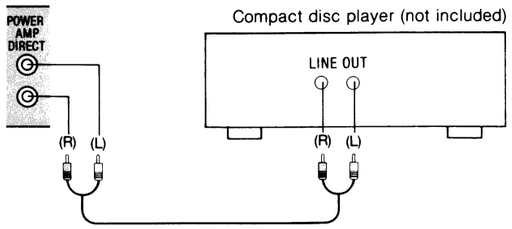
"TAPE 2/DAT" terminals

Connect a second tape deck or a digital audio tape deck (DAT).



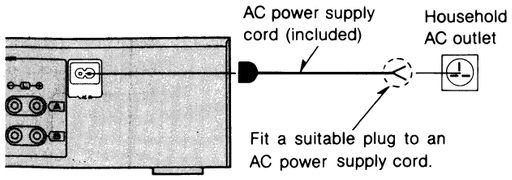
"POWER AMP DIRECT" terminals

Connect a compact disc player.
A superior level of tone quality can be obtained, because the signal from these terminals are sent directly to the volume control and power amp section of this unit.
The sounds from a component connected to these terminals cannot be recorded.



To connect the AC power supply cord (included)

Connect the AC power supply cord (included) after all other cables and cords are connected.



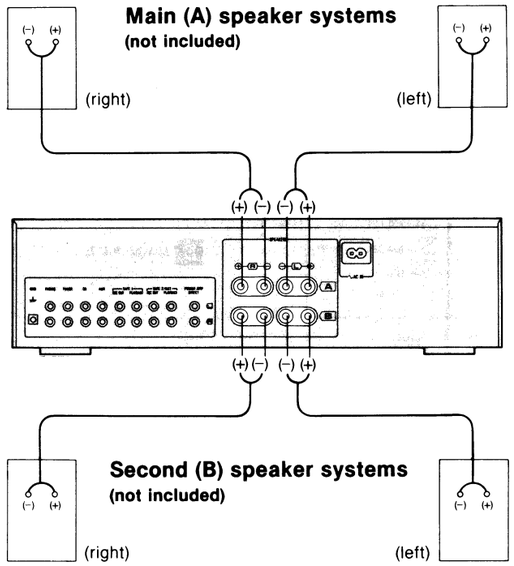
Connection to speaker systems

One pair of speaker systems can be connected to the "A" terminals of this unit and one pair to the "B" terminals.

■ Load impedance

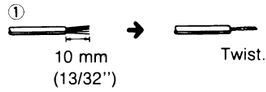
- When only the "A" or only the "B" terminals are used:4-16 ohms
- When both the "A" and the "B" terminals are used simultaneously:8-16 ohms

To connect main (A) and/or second (B) speaker systems



■ To connect cords to terminals

① Strip off the outer covering, and twist the center conductor.

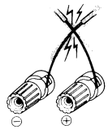


② Turn 5 or 6 times.

③ Insert the wire and tighten screw completely.
Pull the wire to assure a proper connection.

Note: Be sure to only connect positive (+) cords to positive (+) terminals, and negative (−) cords to negative (−) terminals.

Note:
To prevent damage to circuitry, never short-circuit the plus (+) and minus (−) speaker terminals.

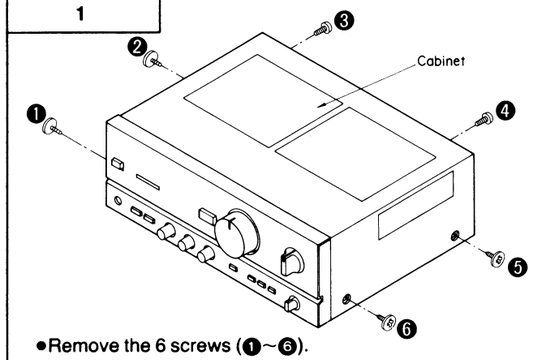


■ DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1 — Removal of the cabinet

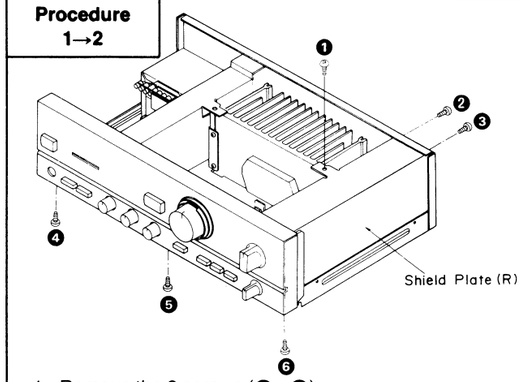
Procedure 1



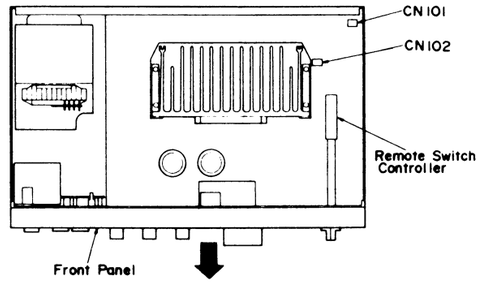
●Remove the 6 screws (❶~❻).

Ref. No. 2 — Removal of the front panel

Procedure 1→2



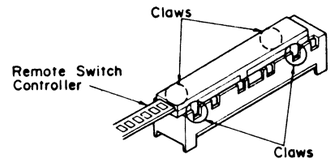
1. Remove the 3 screws (❶~❸).
2. Remove the shield plate (R).
3. Remove the 3 screws (❹~❻).



4. Remove the 2 connectors (CN101, CN102).
5. Remove the remote switch controller.
6. Remove the front panel in the direction of the arrow.

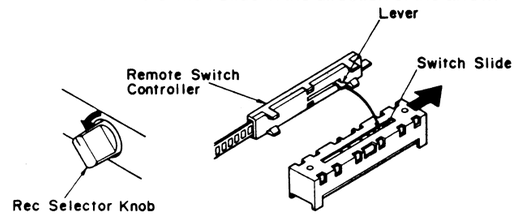
■ Removal of the remote switch controller

●Remove the 4 claws.



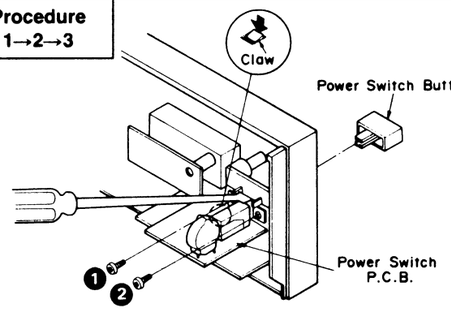
■ Replacing of the remote switch controller

1. Fully rotate the Recording Selector Control counterclockwise.
2. Push the Switch Slide in the direction of the arrow.



Ref. No. 3 — Removal of the power switch P.C.B.

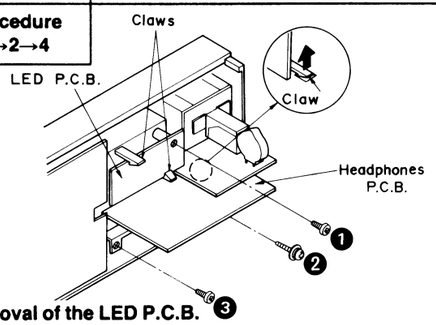
Procedure 1→2→3



1. Remove the power switch button by pushing it from behind the front panel.
2. Remove the 2 screws (❶, ❷).
3. Release the 1 claw.

Ref. No. 4 — Removal of the LED P.C.B. and headphones P.C.B.

Procedure 1→2→4



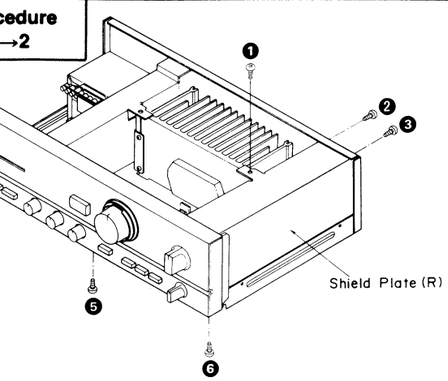
Removal of the LED P.C.B.
1. Remove the 1 screw (❶).
2. Release the 2 claws.

Removal of the headphones P.C.B.
1. Remove the 2 screws (❷, ❸).
2. Release the 1 claw.

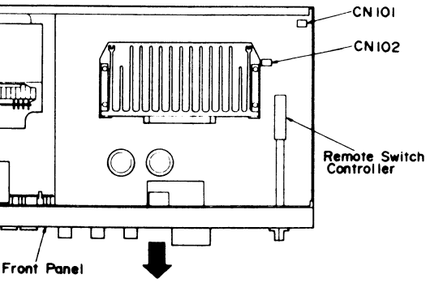
disassembling and servicing.

f. No. 2 | **Removal of the front panel**

cedure →2



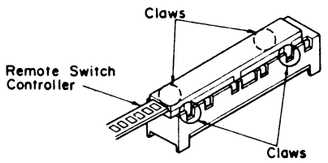
emove the 3 screws (❶~❸).
emove the shield plate (R).
emove the 3 screws (❹~❻).



emove the 2 connectors (CN101, CN102).
emove the remote switch controller.
emove the front panel in the direction of the arrow.

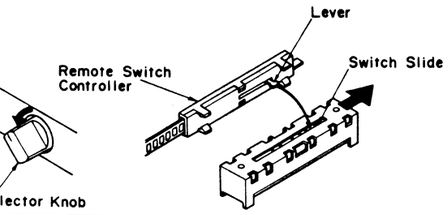
emoval of the remote switch controller

Remove the 4 claws.



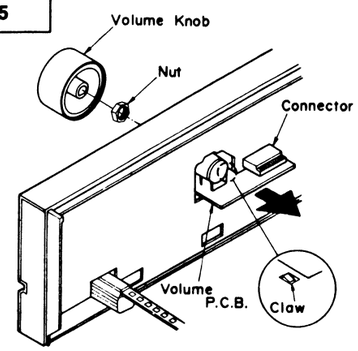
eplacing of the remote switch controller

Fully rotate the Recording Selector Control counterclockwise.
Push the Switch Slide in the direction of the arrow.



Ref. No. 5 | **Removal of the volume P.C.B.**

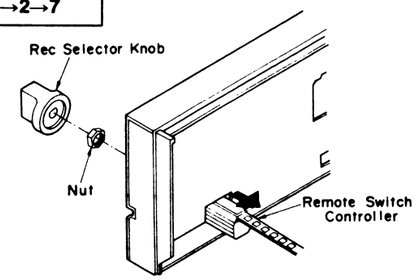
Procedure 1→2→5



1. Pull out the volume knob.
2. Remove the nut.
3. Release the 1 claw.

Ref. No. 7 | **Removal of the remote switch controller**

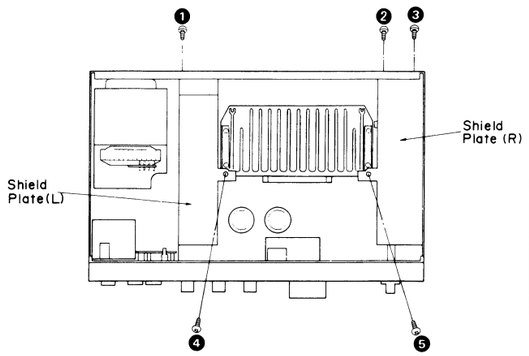
Procedure 1→2→7



1. Pull out the rec selector knob.
2. Remove the nut.
3. Remove the remote switch controller in the direction of the arrow.

Ref. No. 8 | **Removal of the shield plate (L) and shield plate (R)**

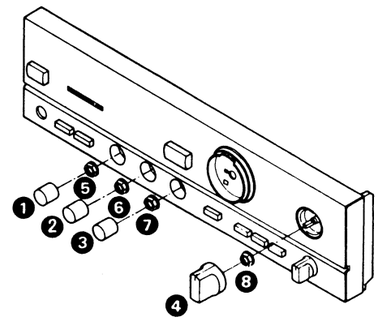
Procedure 1→8



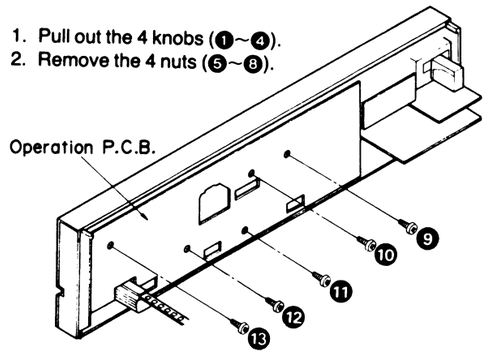
●Remove the 5 screws (❶~❺).

Ref. No. 6 | **Removal of the operation P.C.B.**

Procedure 1→2→5→6

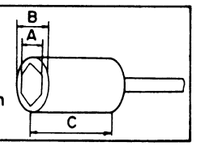


1. Pull out the 4 knobs (❶~❹).
2. Remove the 4 nuts (❺~❽).



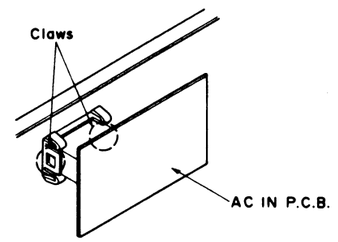
3. Remove the 5 screws (❾~⓭).

●Use a wrench of the dimensions shown in the illustration above to remove nuts.
A: 11 mm
B: 16 mm
C: longer than 22 mm



Ref. No. 9 | **Removal of the AC IN P.C.B.**

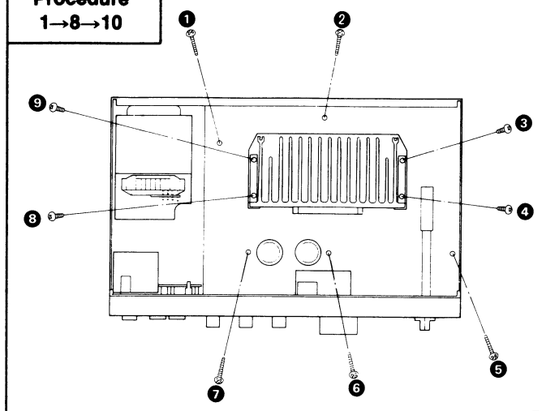
Procedure 1→9



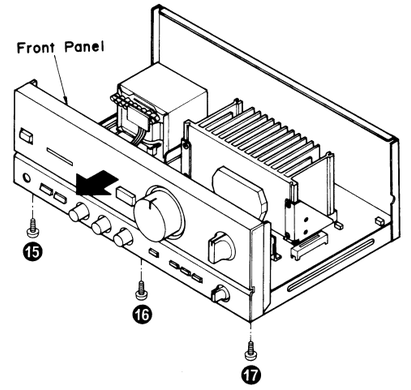
●Release the 2 claws.

Ref. No. 10 | **Checking of the main P.C.B.**

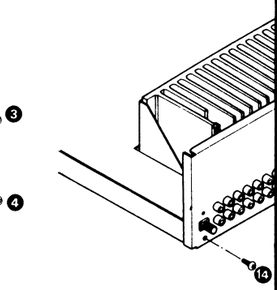
Procedure 1→8→10



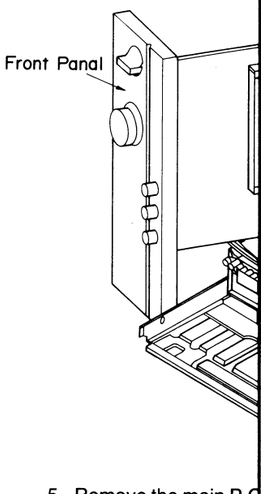
1. Remove the 9 screws (❶~❾).



3. Remove the 3 screws (⓭~⓯).
4. Remove the front panel.



2. Remove the 5 scr

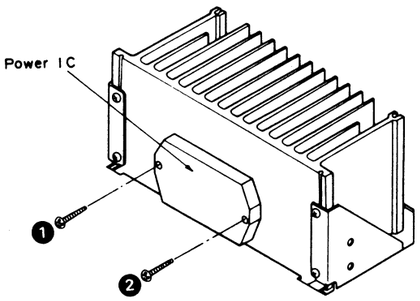


5. Remove the main P.C
arrow Ⓐ.
6. Reinstall the front pan

Ref. No. 11 | **Removal of the power IC**

Procedure 1→8→10→11

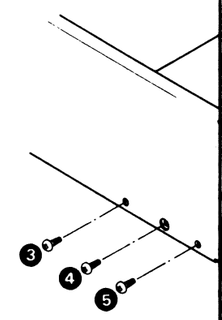
1. Unsolder the power IC.
2. Remove the 2 screws (❶, ❷).



●When mounting the power IC, apply silicon thermal compound (SZZ0L15 or equivalent) to the rear of the power IC.

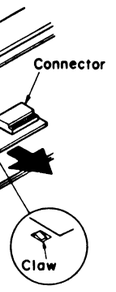
Ref. No. 12 | **Remo**

Procedure 1→12



●Remove the 5 screws (

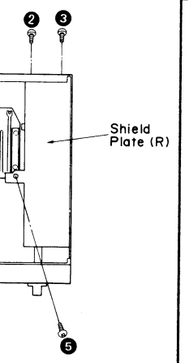
olume P.C.B.



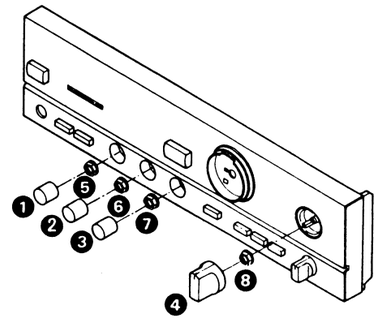
emote switch

n the direction of the

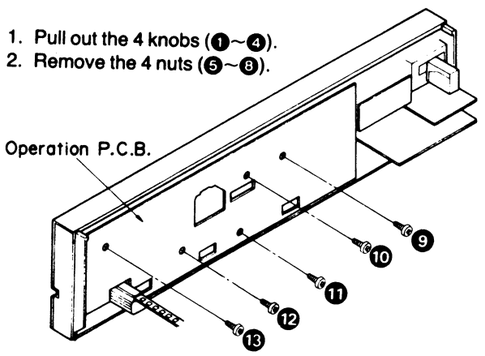
eld plate (L) and



Ref. No. 6	Removal of the operation P.C.B.
Procedure 1→2→5→6	

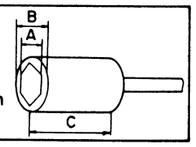


1. Pull out the 4 knobs (❶~❹).
2. Remove the 4 nuts (❺~❽).

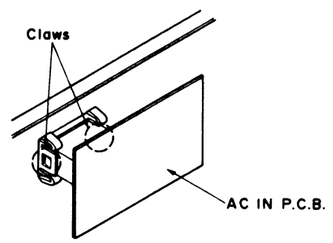


3. Remove the 5 screws (❾~⓭).

- Use a wrench of the dimensions shown in the illustration above to remove nuts.
  A: 11 mm
  B: 16 mm
  C: longer than 22 mm

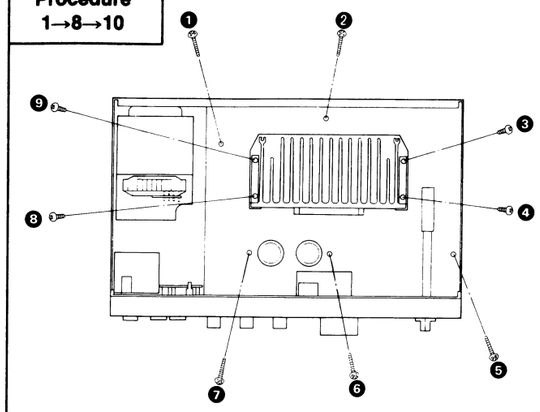


Ref. No. 9	Removal of the AC IN P.C.B.
Procedure 1→9	

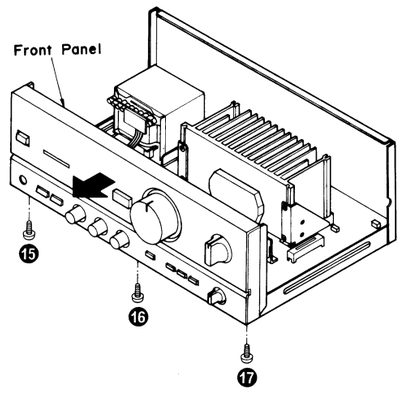


- Release the 2 claws.

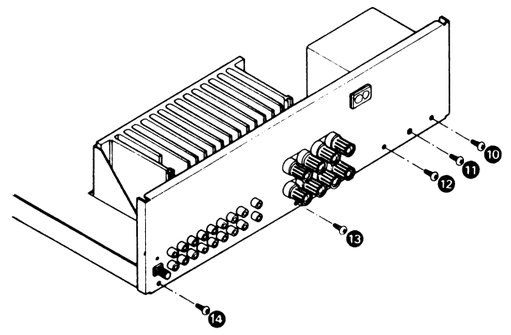
Ref. No. 10	Checking of the main P.C.B.
Procedure 1→8→10	



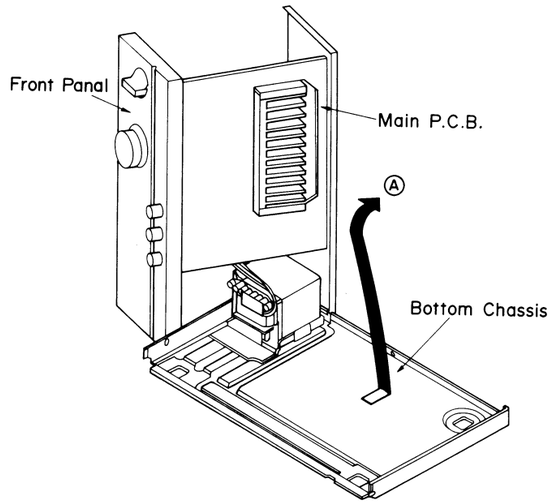
1. Remove the 9 screws (❶~❾).



3. Remove the 3 screws (⓯~⓱).
4. Remove the front panel.



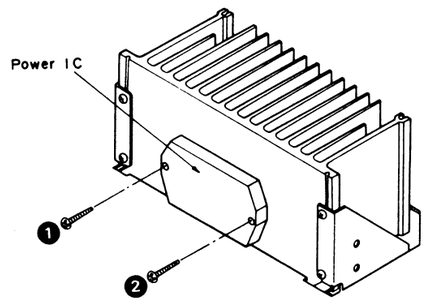
2. Remove the 5 screws (⓾~⓮).



5. Remove the main P.C.B. unit in the direction of the arrow Ⓐ.
6. Reinstall the front panel to the main P.C.B.

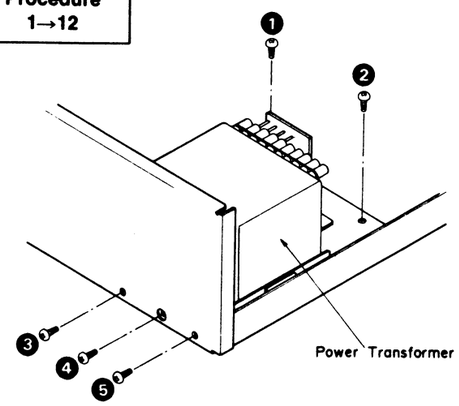
Ref. No. 11	Removal of the power IC
Procedure 1→8→10→11	

1. Unsolder the power IC.
2. Remove the 2 screws (❶, ❷).



- When mounting the power IC, apply silicon thermal compound (SZZ0L15 or equivalent) to the rear of the power IC.

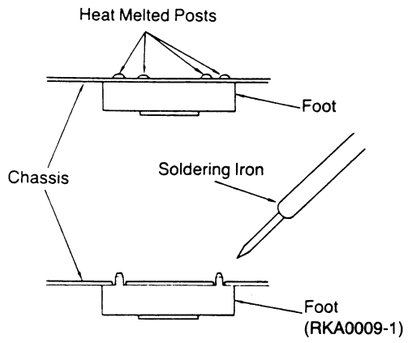
Ref. No. 12	Removal of the power transformer
Procedure 1→12	



- Remove the 5 screws (❶~❺).

●Replacement of the Foot.

1. Remove the 4 heat melted posts on the chassis with a pair of diagonal pliers or similar tool.
2. To mount the foot (RKA0009-1) on the chassis, melt the 4 posts with a soldering iron.



SU-V470 SU-V470

■ SCHEMATIC DIAGRAM

(Parts list on page 20~22)

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

- **•S1** : Power switch in **"on"** position.
- **•S101** : Input selector switch in **"phono"** position.
- **•S102** : Recording output selector switch in **"tape 2/ DAT▶1"** position.
- **•S103-1** : Phono cartridge selector switch in **"MM"** position.
- **•S103-2** : Mode selector switch in **"stereo"** position.
- **•S103-3** : Loudness switch in **"off"** position.
- **•S301** : Tone control switch in **"defeat"** position.
- **•S302** : Power amplifier direct switch in **"off"** position.
- **•S501-1** : Speaker **(A)** selector switch in **"on"** position.
- **•S501-2** : Speaker **(B)** selector switch in **"off"** position.
- ——— : Positive voltage lines.
- - - - - : Negative voltage lines.
- ▒▒▒ : Phono Signal (Lch)
- ▒▒▒ : Recording Signal

•Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

•Caution!

IC and LSI are sensitive to static electricity.

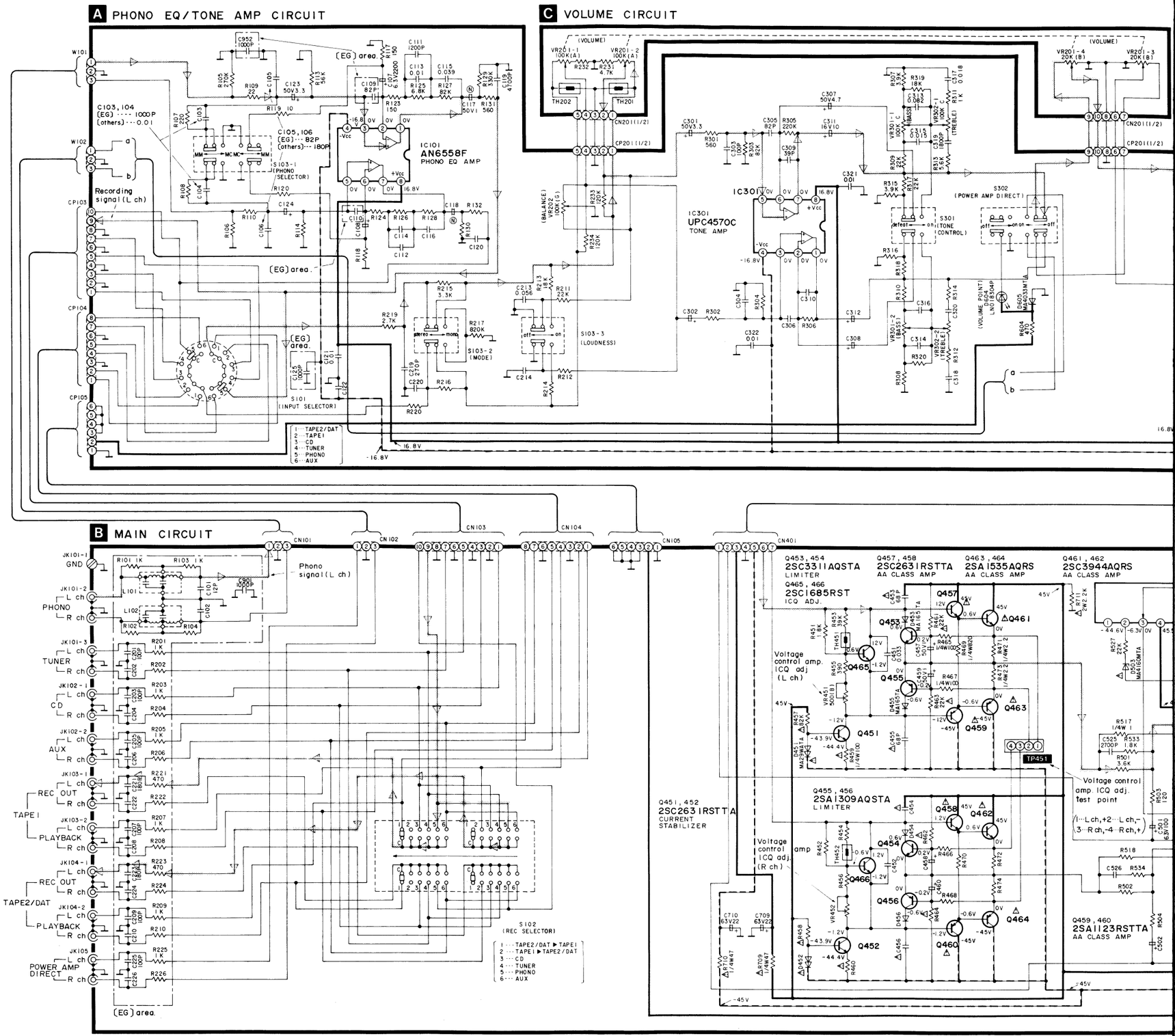
Secondary trouble can be prevented by taking care during repair.

•Cover the parts boxes made of plastics with aluminum foil.

•Ground the soldering iron.

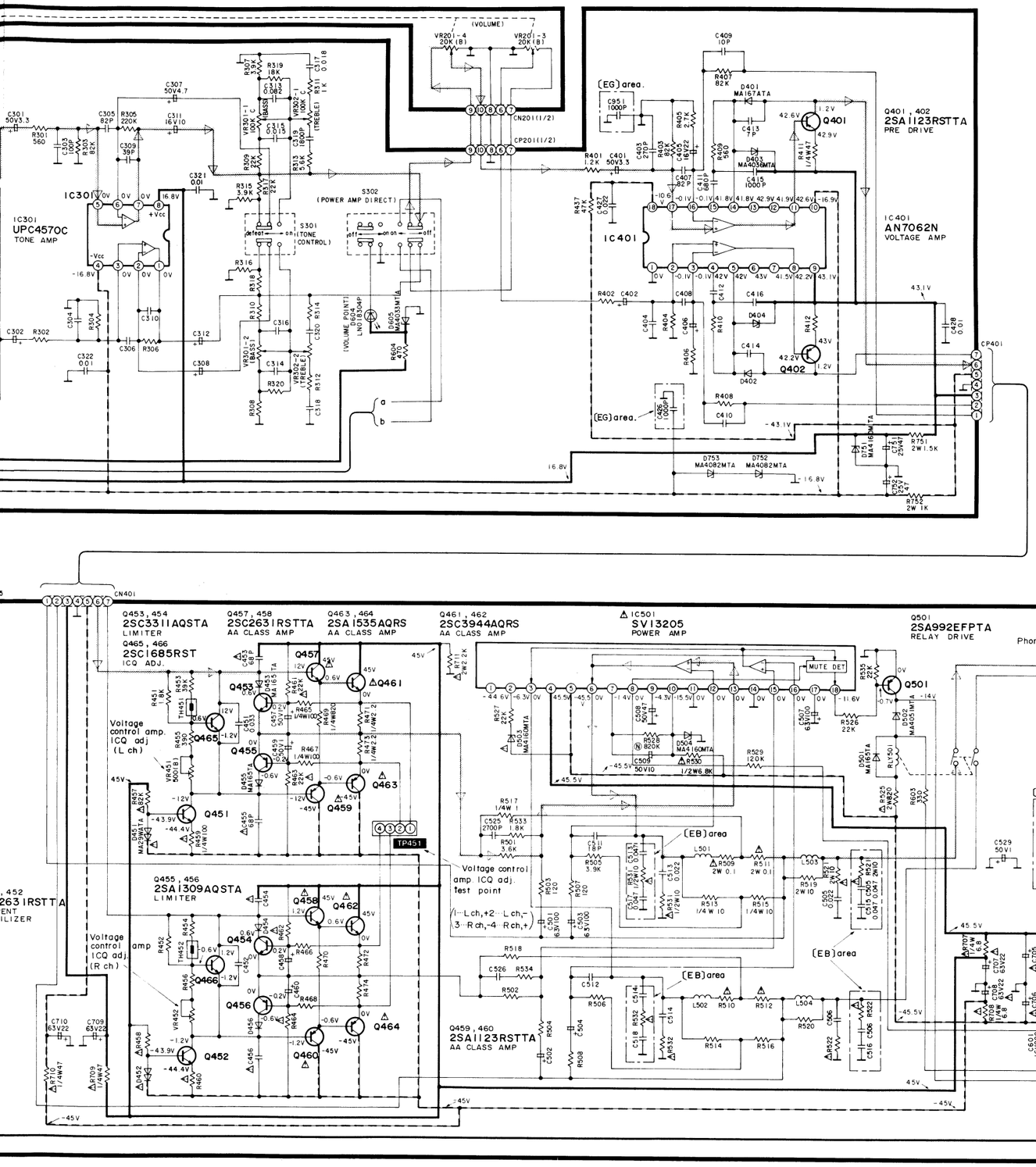
•Put a conductive mat on the work table.

•Do not touch the legs of IC or LSI with the fingers directly.

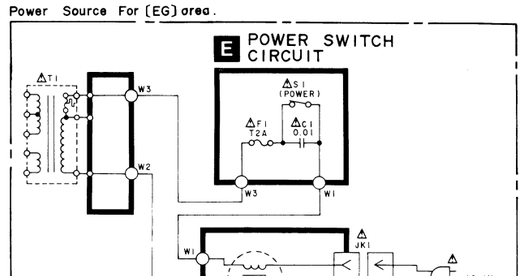


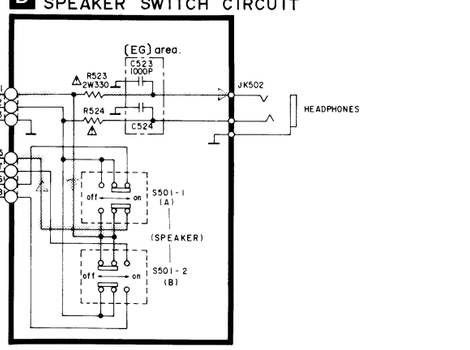
SU-V470
SU-V470

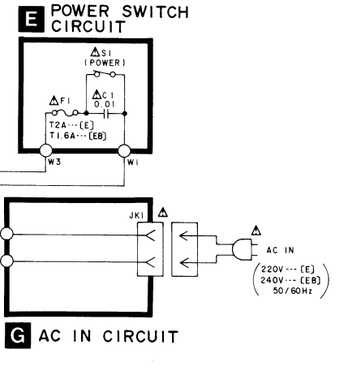
8 9 10 11 12 13 14 15 16

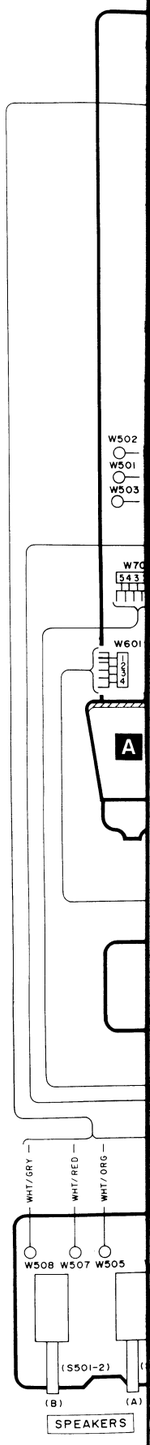


Power Source For (EG) area.



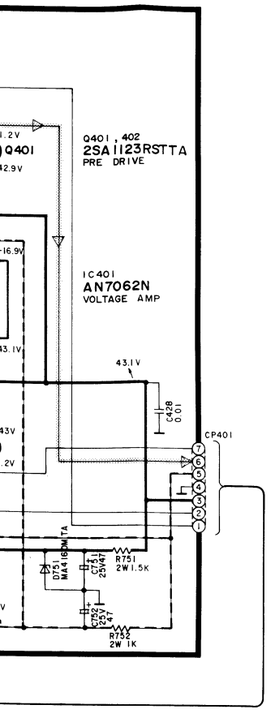




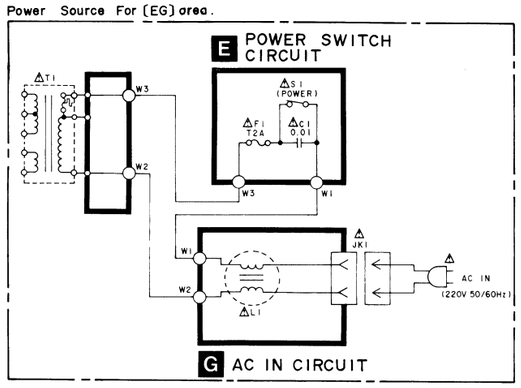


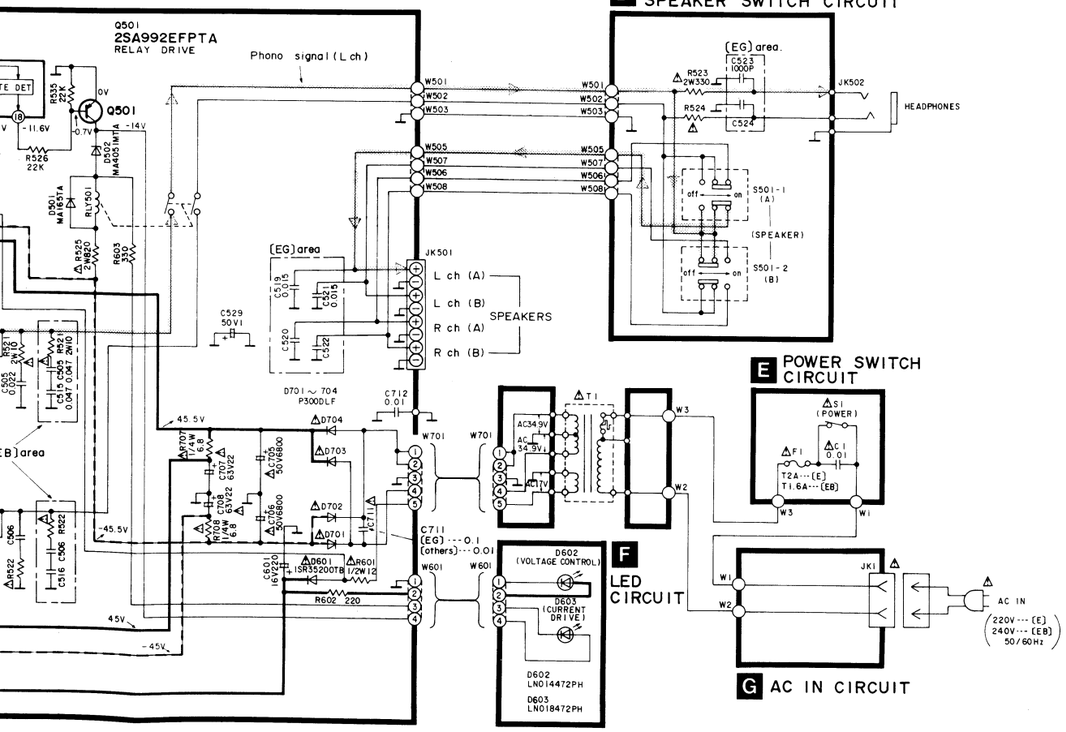
SU-V470

12 13 14 15 16

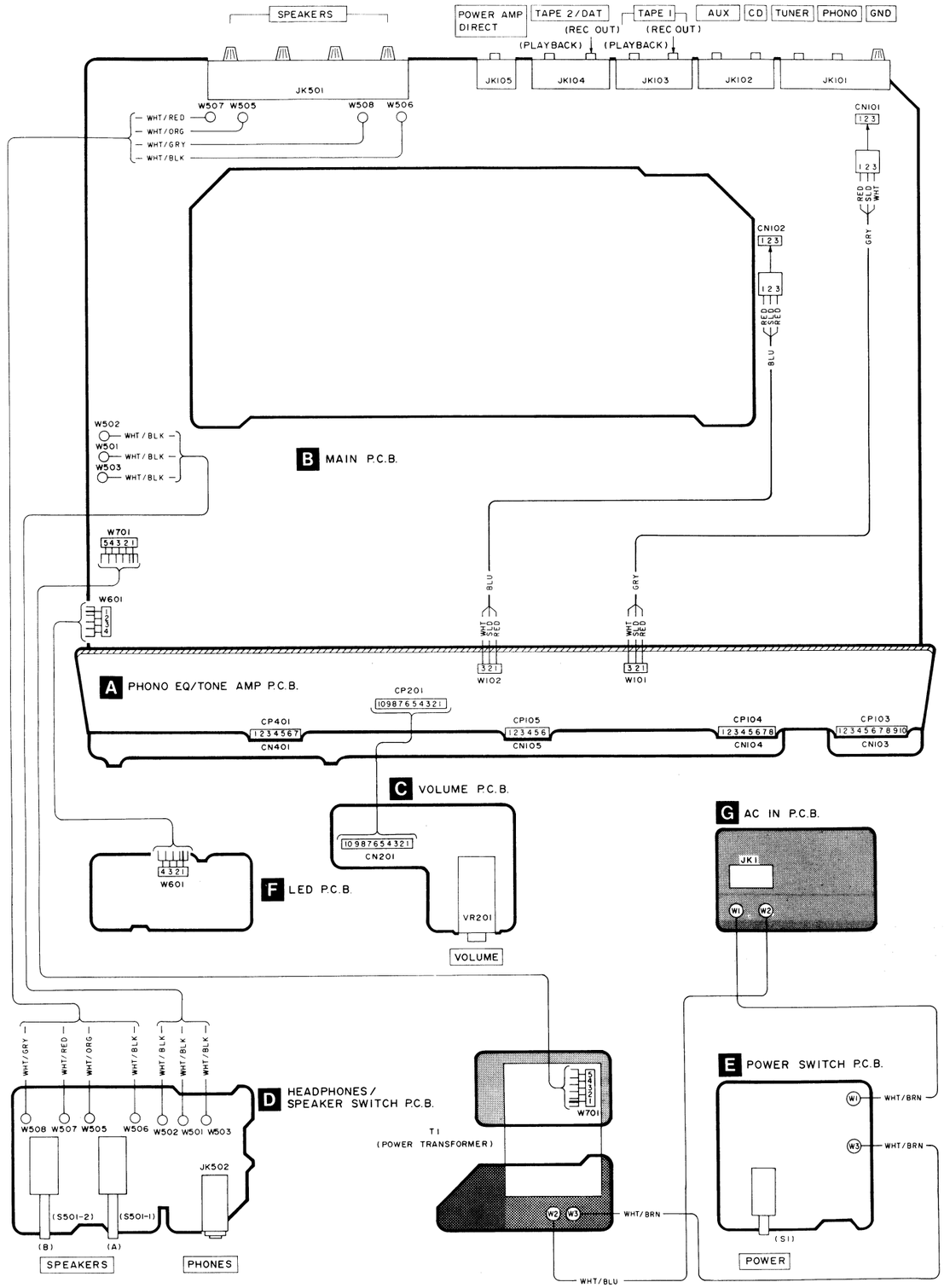


Power Source For (EG) area.

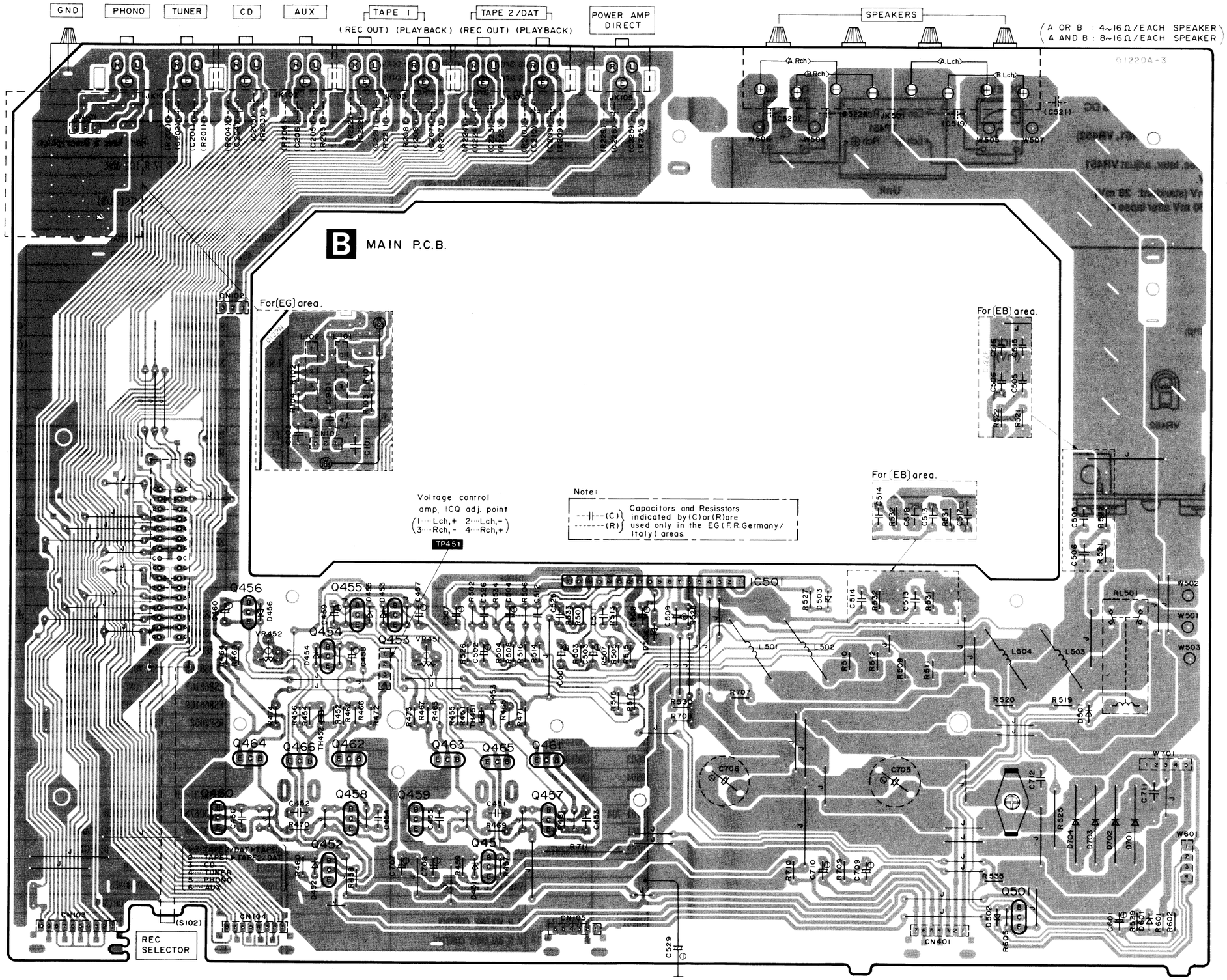


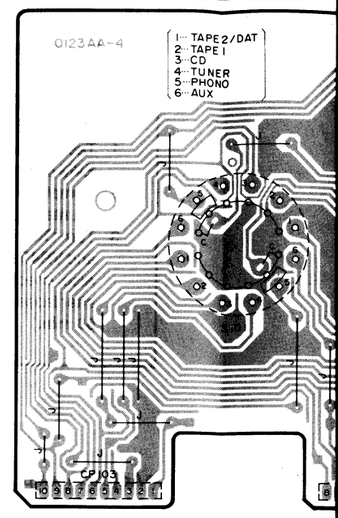


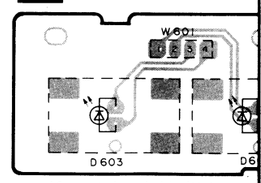
■ WIRING CONNECTION DIAGRAM

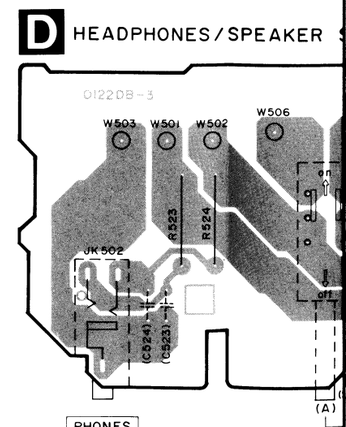


■ PRINTED CIRCUIT BOARDS (Parts list on pages 20~22)



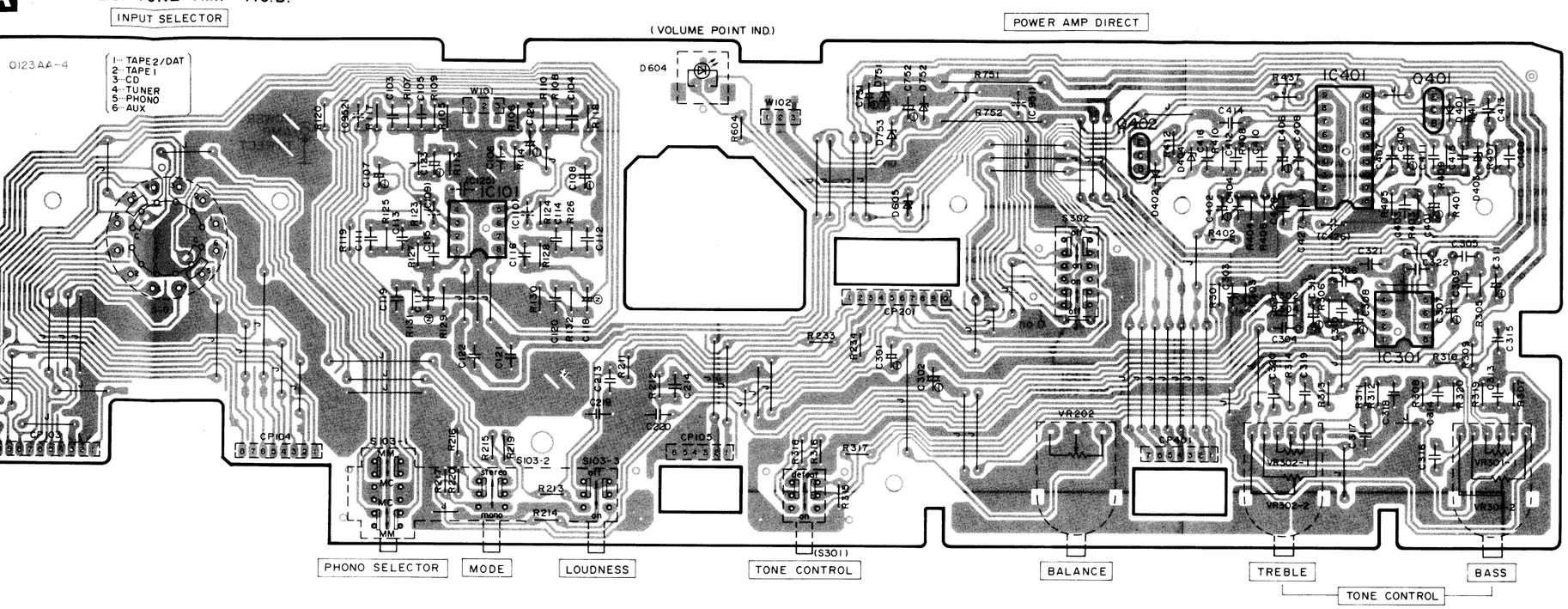




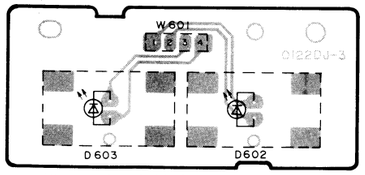


10 11 12 13 14 15 16 17

A PHONO EQ/TONE AMP P.C.B.

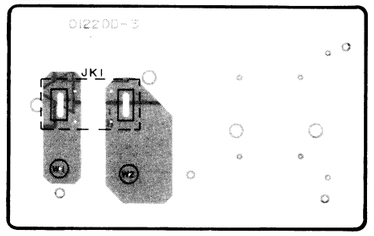


F LED P.C.B.



(Current drive Ind.) (Voltage control Ind.)

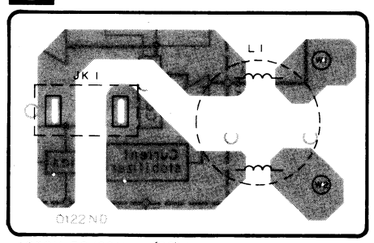
G AC IN P.C.B.



(220V····(E)
240V····(EB)
50/60 Hz)

AC IN

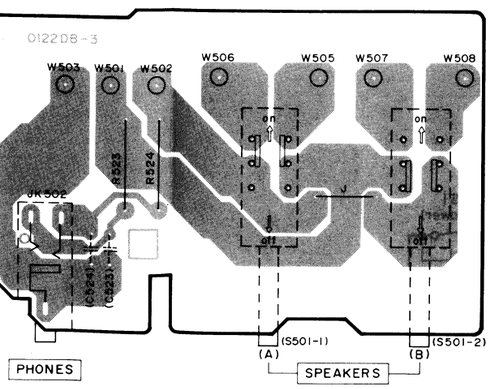
G AC IN P.C.B.



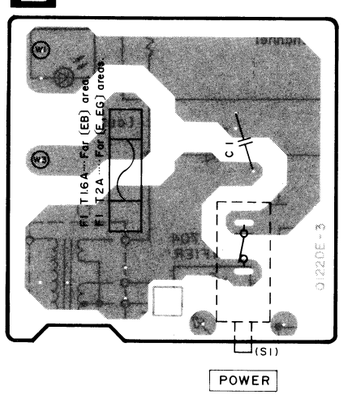
(220V 50/60Hz····(EG))

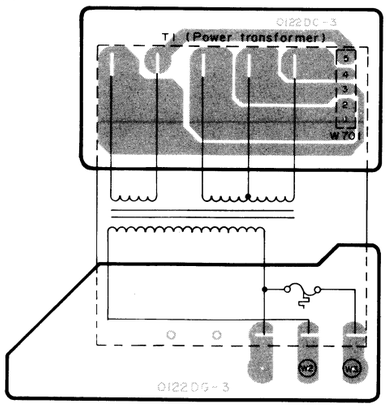
AC IN

D HEADPHONES/SPEAKER SWITCH P.C.B.

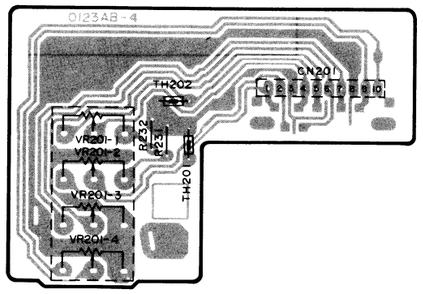


E POWER SWITCH P.C.B.



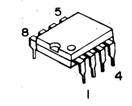


C VOLUME P.C.B.



■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

AN6558F
UPC4570C



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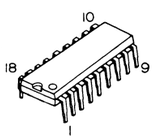

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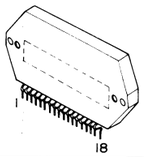
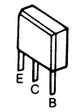


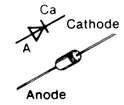
2SA1309AQRS
2SC3311AQSTA



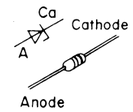
2SA992EFPTA
2SA1123RSTTA
2SC1685RST
2SC2631RSTTA

2SA1535AQRS
2SC3944AQRS

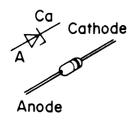
MA165TA
MA167ATA
MA29WATA
1SR35200TB



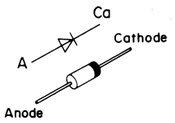
MA4033MTA
MA4036MTA
MA4051MTA
MA4082MTA



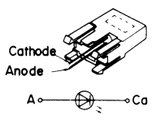
MA4160MTA



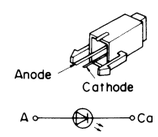
P300DLF



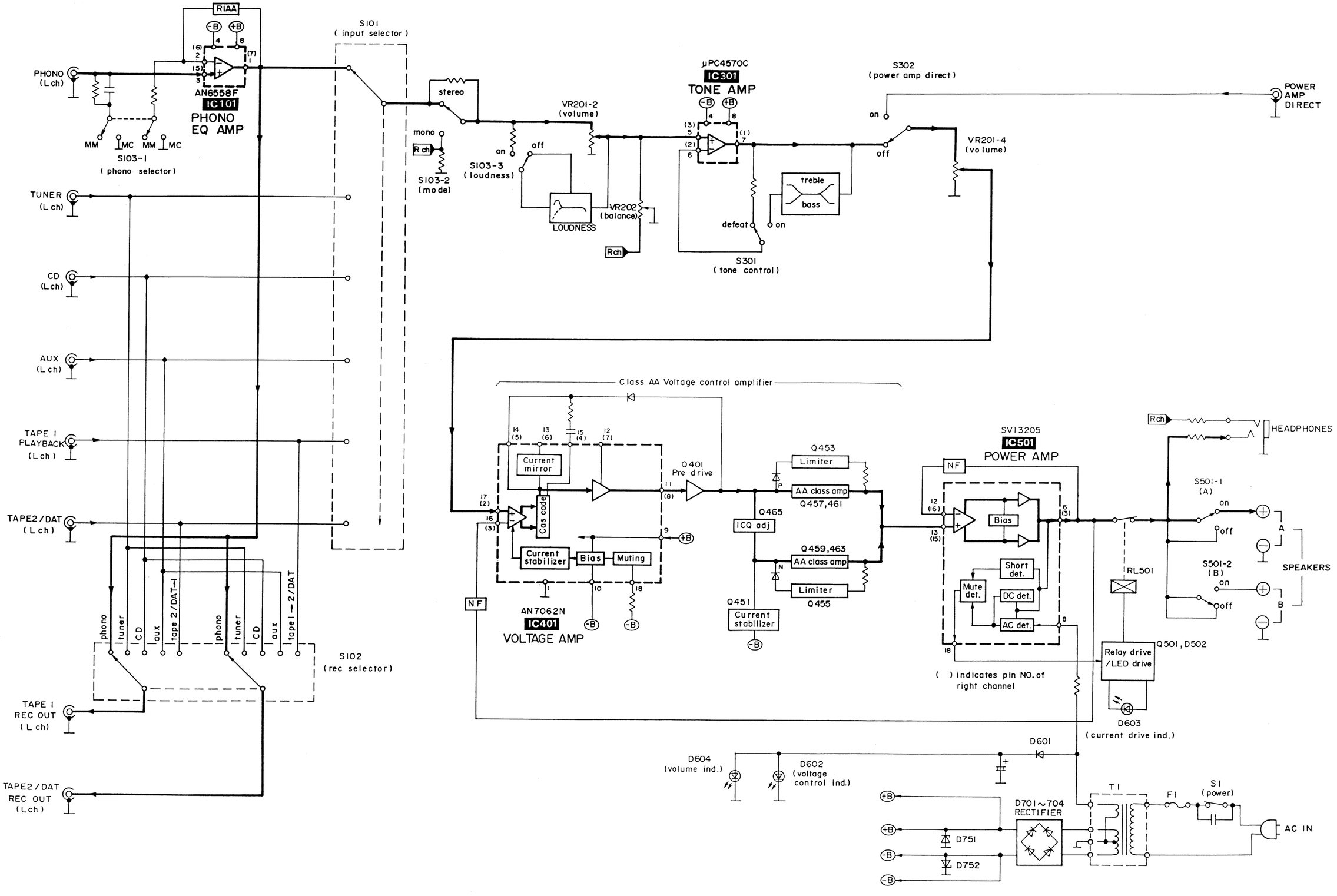
LN014472PH
LN018472PH



LN018304P



■ BLOCK DIAGRAM



■ MEA

Control
•Volume
•Main spe

VOLTAG
ADJUST
1. Test e
EVM o
2. Compl
counte
3. Turn C
and VR
Also, c
after la
60 mi

•Adjustmen

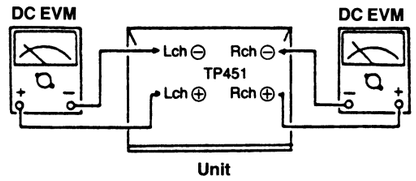
■ MEASUREMENTS AND ADJUSTMENTS

Control positions and equipment used.

- Volume knob ..... ∞ (Minimum)
- Main speaker selector ..... off
- Balance knob 0
- DC electronic voltmeter (EVM)

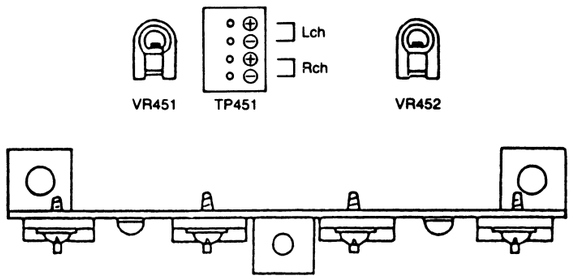
VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT

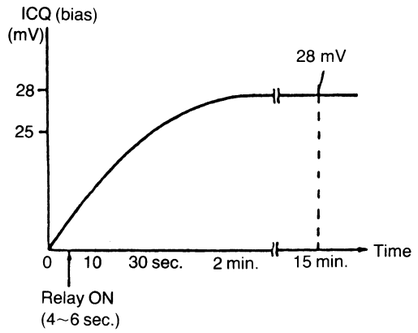
1. Test equipment connection is shown in figure. (Connect the DC EVM on both channels.)
2. Completely turn the (V) amp. adjusting volumes (**VR451, VR452**) counter-clockwise.
3. Turn ON the set when it is cold, and 15 sec. later, adjust **VR451** and **VR452** so that the voltage is **25 mV**.
   Also, check that the voltage is **25~30 mV** (standard: **28 mV**) after lapse of **10–15 minutes**. (Below **30 mV** after lapse of **60 min.**)



•Adjustment points

Voltage control Amp.





■ REPLACEMENT PARTS LIST

Notes: •Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
•The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
•"K" mark parts are used for black type only.
•"S" mark parts are used for silver type only.
Parts other than "K" and "S" marked are used for all color types.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC101	AN6558F	IC, PHONO EQ AMP.	
IC301	UPC4570C	IC, TONE AMP.	
IC401	AN7062N	IC, V AMP.	
IC501	SVI3205	IC, POWER AMP.	⚠
		TRANSISTOR(S)	
Q401, 402	2SA1123RSTTA	TRANSISTOR	
Q451, 452	2SC2631RSTTA	TRANSISTOR	
Q453, 454	2SC3311AQSTA	TRANSISTOR	
Q455, 456	2SA1309AQSTA	TRANSISTOR	
Q457, 458	2SC2631RSTTA	TRANSISTOR	⚠
Q459, 460	2SA1123RSTTA	TRANSISTOR	⚠
Q461, 462	2SC3944AQRS	TRANSISTOR	⚠
Q463, 464	2SA1535AQRS	TRANSISTOR	⚠
Q465, 466	2SC1685RST	TRANSISTOR	
Q501	2SA992EFPTA	TRANSISTOR	
		DIODE(S)	
D401, 402	MA167ATA	DIODE	
D403, 404	MA4036MTA	DIODE	
D451, 452	MA29WATA	DIODE	⚠
D453-456	MA165TA	DIODE	
D501	MA165TA	DIODE	
D502	MA4051MTA	DIODE	
D503	MA4160MTA	DIODE	⚠
D504	MA4160MTA	DIODE	
D601	1SR35200TB	DIODE	⚠
D602	LN014472PH	DIODE	
D603	LN018472PH	DIODE	
D604	LN018304P	DIODE	
D605	MA4033MTA	DIODE	
D701-704	P300DLF	DIODE	⚠
D751	MA4160MTA	DIODE	
D752, 753	MA4082MTA	DIODE	
		VARIABLE RESISTOR(S)	
VR201	RRV16J01A	V. R, VOLUME CONTROL	
VR202	EWHFDA014G15	V. R, BALANCE CONTROL	
VR301, 302	EWC2XA000C15	V. R, TONE CONTROL	

Ref. No.	Part No.	Part Name & Description	Remarks
VR451, 452	EVNDXAA00B52	V. R, ICQ ADJ.	
		THERMISTOR(S)	
TH201, 202	ERTD2ZHL104T	THERMISTOR	
TH451, 452	ERTD2ZHL104T	THERMISTOR	
		COIL(S)	
L1	SLQZ650MH49	COIL	(EG) ⚠
L101, 102	SLM1Z33	COIL	(EG)
L501-504	SLQY18G-10	COIL	
		TRANSFORMER(S)	
T1	RFKCUV470E-K	POWER TRANSFORMER	(E, EG) ⚠
T1	RFKCUV470EBK	POWER TRANSFORMER	(EB) ⚠
		FUSE(S)	
F1	XBA2C20TB0	FUSE 250V 2.0A	(E, EG) ⚠
F1	XBA2C16TB0	FUSE 250V 1.6A	(EB) ⚠
		SWITCH(ES)	
S1	ESB8249V	SW, POWER	⚠
S101	RSR6B001	SW, INPUT SELECTOR	
S102	RSS6D001	SW, REC SELECTOR	
S103	ESB68106	SW, MODE/LOUDNESS/PHONO	
S301	ESB68107	SW, TONE CONTROL	
S302	ESB68109	SW, POWER AMP. DIRECT	
S501	RSP2002	SW, SPEAKER SELECTOR	
		JACK(S)	
JK1	SJS9231-1B	AC INLET	⚠
JK101	SJF3067NJ	PHONO/TUNER	
JK102-104	SJF3069N	CD/AUX/TAPE1/TAPE2	
JK105	SJF3068NJ	POWER AMP DIRECT	
JK501	SJF4819	SPEAKER	
JK502	SJJD19	HEADPHONES	
CN101, 102	SJT3319	CONNECTOR(3P)	
CN103	SJS51080WL	SOCKET(10P)	
CN104	SJS50880WL	SOCKET(8P)	
CN105	SJS50680WL	SOCKET(6P)	

Ref. No.	Part No.	Part Name & Description	Remarks
CN201	SJS51080WL	SOCKET(10P)	
CN401	SJS50780WL	SOCKET(7P)	
CP103	SJT31047WL	CONNECTOR(10P)	
CP104	SJT30847WL	CONNECTOR(8P)	
CP105	SJT30647WL	CONNECTOR(6P)	
CP201	SJT31047WL	CONNECTOR(10P)	
CP401	SJT30747WL	CONNECTOR(7P)	

Ref. No.	Part No.	Part Name & Description	Remarks
		FUSE HOLDER(S)	
FC1, 2	EYF52BC	FUSE HOLDER	
		RELAY	
RL501	SSY134	RELAY	

Notes : • Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
• Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R101-104	ERDS2TJ102T	1/4W 1K (EG)
R105, 106	ERDS2TJ274T	1/4W 270K
R107, 108	ERDS2TJ221T	1/4W 220
R109, 110	ERDS2TJ220T	1/4W 22
R113, 114	ERDS2TJ563T	1/4W 56K
R117, 118	ERDS2TJ151T	1/4W 150
R119, 120	ERDS2TJ100T	1/4W 10
R123, 124	ERDS2TJ151T	1/4W 150
R125, 126	ERDS2TJ682T	1/4W 6.8K
R127, 128	ERDS2TJ823T	1/4W 82K
R129, 130	ERDS2TJ334T	1/4W 330K
R131, 132	ERDS2TJ561T	1/4W 560
R201-210	ERDS2TJ102T	1/4W 1K (EG)
R211, 212	ERDAS3G223T	1/4W 22K
R213, 214	ERDS2TJ183T	1/4W 18K
R215, 216	ERDS2TJ332T	1/4W 3.3K
R217	ERDS2TJ824T	1/4W 820K
R219, 220	ERDAS3G272T	1/4W 2.7K
R221-224	ERDS2TJ471T	1/4W 470 (EG)
R225, 226	ERDS2TJ102T	1/4W 1K (EG)
R231, 232	ERDAS3G472T	1/4W 4.7K
R233, 234	ERDAS3G124T	1/4W 120K
R301, 302	ERDAS3G561T	1/4W 560
R303, 304	ERDS2TJ823T	1/4W 82K
R305, 306	ERDS2TJ224T	1/4W 220K
R307, 308	ERDS2TJ392T	1/4W 3.9K

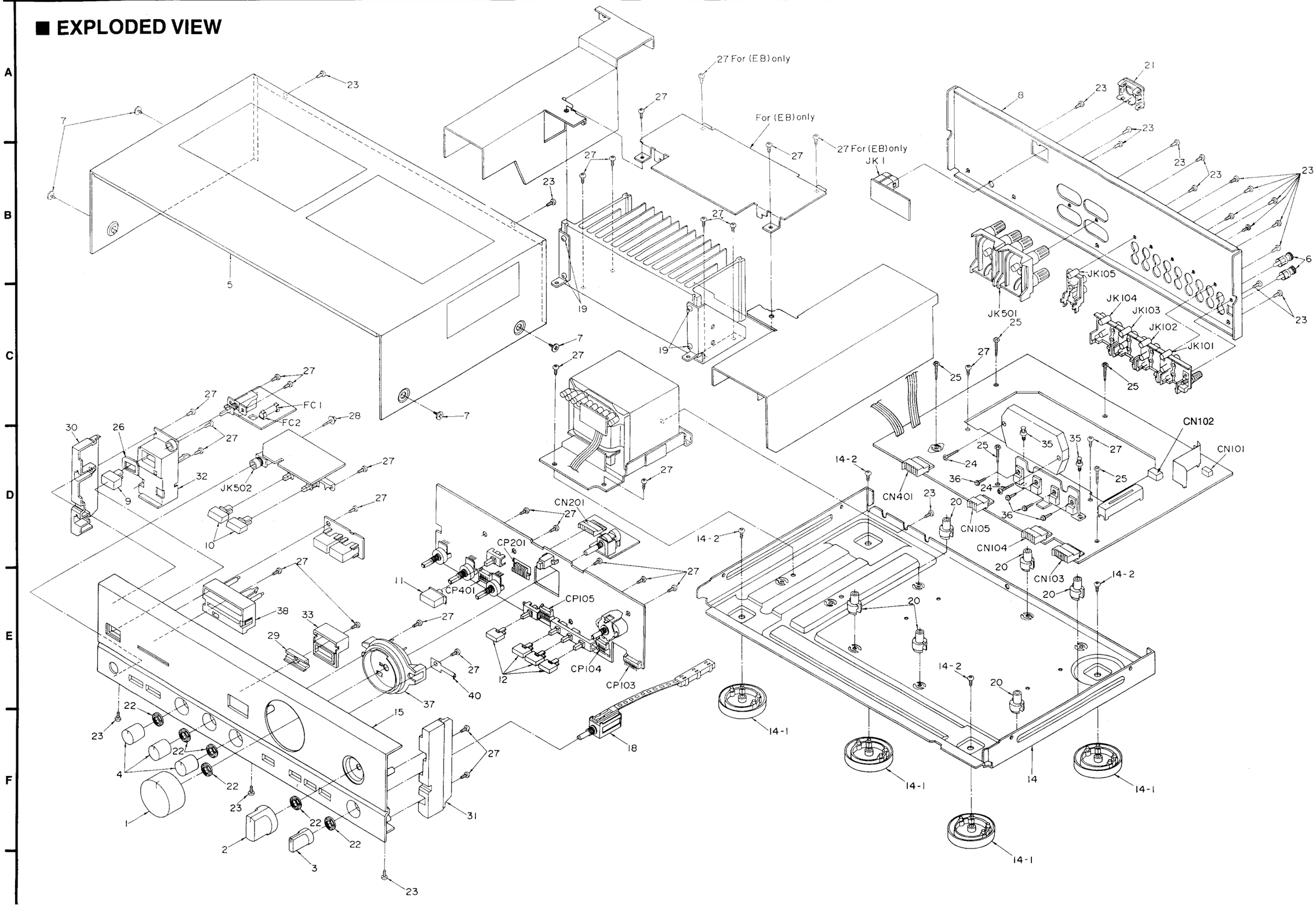
Ref. No.	Part No.	Values & Remarks
R309, 310	ERDS2TJ223T	1/4W 22K
R311, 312	ERDS2TJ102T	1/4W 1K
R313, 314	ERDS2TJ562T	1/4W 5.6K
R315, 316	ERDAS3G392T	1/4W 3.9K
R317, 318	ERDAS3G223T	1/4W 22K
R319, 320	ERDS2TJ183T	1/4W 18K
R401, 402	ERDS2TJ122T	1/4W 1.2K
R403, 404	ERDS2TJ823T	1/4W 82K
R405, 406	ERDAS3G272T	1/4W 2.7K
R407, 408	ERDAS3G823T	1/4W 82K
R409, 410	ERDS2TJ561T	1/4W 560
R411, 412	ERDFS2VJ470T	1/4W 47
R437	ERDS2TJ473T	1/4W 47K
R451, 452	ERDS2TJ182T	1/4W 1.8K
R453, 454	ERDS2TJ393T	1/4W 39K
R455, 456	ERDS2TJ391T	1/4W 390
R457, 458	ERDS2TJ823T	1/4W 82K ⚠
R459, 460	ERDFS2VJ101T	1/4W 100 ⚠
R461-464	ERDS2TJ223T	1/4W 22K ⚠
R465-468	ERDFS2VJ101T	1/4W 100
R469, 470	ERDFS2VJ821T	1/4W 820
R471-474	ERDFS2VJ2R2T	1/4W 2.2
R501, 502	ERDS2TJ362T	1/4W 3.6K
R503, 504	ERDS2TJ121T	1/4W 120
R505, 506	ERDS2TJ392T	1/4W 3.9K
R507, 508	ERDS2TJ121T	1/4W 120
R509-512	RREEMKR10VC	2W 0.1 ⚠
R513-516	ERDFS2VJ100T	1/4W 10
R517, 518	ERDFS2VJ1R0T	1/4W 1

Ref. No.	Part No.	Values & Remarks
R519, 520	ERDFS2VJ100T	1/4W 10
R521, 522	ERDS1FVJ100T	1/2W 10 ⚠
R523, 524	ERG2SJ331H	2W 330 ⚠
R525	ERG2SJ821H	2W 820 ⚠
R526, 527	ERDS2TJ223T	1/4W 22K
R528	ERDS2TJ824T	1/4W 820K
R529	ERDS2TJ124T	1/4W 120K
R530	ERDS1FVJ682T	1/2W 6.8K ⚠
R531, 532	ERDS1FVJ100T	1/2W 10 ⚠
R533, 534	ERDS2TJ182T	1/4W 1.8K
R535	ERDS2TJ223T	1/4W 22K
R601	ERDS1FVJ120T	1/2W 12 ⚠
R602	ERDS2TJ221T	1/4W 220
R603	ERDS2TJ331T	1/4W 330
R604	ERDS2TJ471T	1/4W 470
R707, 708	ERDFS2VJ6R8T	1/4W 6.8 ⚠
R709, 710	ERDFS2VJ470T	1/4W 47 ⚠
R711	ERG2ANJP222S	2W 2.2K ⚠
R751	ERG2ANJP152S	2W 1.5K
R752	ERG2ANJP102S	2W 1K
		CAPACITORS
C1	ECKWKC103PF2	400V 0.01U ⚠
C101, 102	ECBT1H120J5	50V 12P (EG)
C103, 104	ECKR1H103ZF5	50V 0.01U (E, EB)
C103, 104	ECKR1H102KB5	50V 1000P (EG)
C105, 106	ECBT1H181KB5	50V 180P (E, EB)
C105, 106	ECBT1H820KB5	50V 82P (EG)

Ref. No.	Part No.	Values & Remarks
C107, 108	ECEA0JU222E	6.3V 2200U
C109, 110	ECBT1H820KB5	50V 82P (EG)
C111, 112	ECQM1H122KV3	50V 1200P
C113, 114	ECQM1H103KV3	50V 0.01U
C115, 116	ECQV1H393JZ3	50V 0.039U
C117, 118	UES1HD10M1TA	50V 1U
C119, 120	ECQM1H472KV3	50V 4700P
C121, 122	ECKR1H103ZF5	50V 0.01U
C123, 124	ECA1HPXS3R3B	50V 3.3U
C125	ECBT1H102KB5	50V 1000P (EG)
C201-210	ECBT1H101KB5	50V 100P (EG)
C213, 214	ECQV1H563JZ3	50V 0.056U
C219, 220	ECBT1H271KB5	50V 270P
C221-224	ECBT1H181KB5	50V 180P (EG)
C225, 226	ECBT1H101KB5	50V 100P (EG)
C301, 302	ECA1HPXS3R3B	50V 3.3U
C303, 304	ECBT1H101KB5	50V 100P
C305, 306	ECBT1H820KB5	50V 82P
C307, 308	ECA1HPXS4R7B	50V 4.7U
C309, 310	ECBT1H390J5	50V 39P
C311, 312	ECA1CPXS100B	16V 10U
C313, 314	ECQV1H823JZ3	50V 0.082U
C315, 316	ECQM1H153KV3	50V 0.015U
C317, 318	ECQM1H183KV3	50V 0.018U
C319, 320	ECQM1H182KV3	50V 1800P
C321, 322	ECKR1H103ZF5	50V 0.01U
C401, 402	ECA1HPXS3R3B	50V 3.3U
C403, 404	ECBT1H271KB5	50V 270P
C405, 406	ECA1CPXS220B	16V 22U
C407, 408	ECBT1H820KB5	50V 82P
C409, 410	ECBT1H100J5	50V 10P
C411, 412	ECBT1H681KB5	50V 680P
C413, 414	ECCR2H070D5	500V 7P
C415, 416	ECQM1H102KV3	50V 1000P
C426	ECBT1H102KB5	50V 1000P (EG)
C427	ECKR1H223ZF5	50V 0.022U
C428	ECKR1H103ZF5	50V 0.01U
C451, 452	ECKR1H333ZF5	50V 0.033U
C453-456	ECCR2H680K5	500V 68P ⚠
C457-460	ECEA1HK010B	50V 1U
C501-504	ECA0JPXS101B	6.3V 100U
C505, 506	ECKR1H223ZF5	50V 0.022U (E, EG)
C505, 506	ECKR1H473ZF5	50V 0.047U (EB)
C507	ECEA0JK101B	6.3V 100U
C508	ECEA1HU470B	50V 47U
C509	ECEA1HN100SB	50V 10U
C511, 512	ECBT1H180J5	50V 18P
C513, 514	ECKR1H223ZF5	50V 0.022U (E, EG)
C513, 514	ECKR1H473ZF5	50V 0.047U (EB)
C515-518	ECKR1H473ZF5	50V 0.047U (EB)
C519-522	ECQM1H153KV3	50V 0.015U (EG)
C523, 524	ECBT1H102KB5	50V 1000P (EG)

Ref. No.	Part No.	Values & Remarks
C525, 526	ECQB1H272JZ3	50V 2700P
C529	ECEA1HK010B	50V 1U
C601	ECEA1CU221B	16V 220U
C705, 706	ECES1HV682UG	50V 6800U ⚠
C707, 708	ECEA1JU220B	63V 22U ⚠
C709, 710	ECEA1JU220B	63V 22U
C711	ECKR2H103ZU	500V 0.01U ⚠(E, EB)
C711	ECQE2104KF3	200V 0.1U ⚠(EG)
C712	ECKR1H103ZF5	50V 0.01U
C751, 752	ECA1EPXS470B	25V 47U
C901	ECKR1H102KB5	50V 1000P (EG)
C951, 952	ECBT1H102KB5	50V 1000P (EG)

■ EXPLODED VIEW



Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RGW0025-K	VOLUME KNOB	K
1	RGW0025-S	VOLUME KNOB	S
2	RGW0026-K	INPUT SELECT KNOB	K
2	RGW0026-S	INPUT SELECT KNOB	S
3	RGW0027-2K	REC SELECT KNOB	K
3	RGW0027-S	REC SELECT KNOB	S
4	RGW0028-2K	TONE KNOB	K
4	RGW0028-S	TONE KNOB	S
5	RKM0036A-K	CABINET	K
5	RKM0036A-S	CABINET	S
6	SJPA11-1	SHORTING PIN	
7	SNE2129-1	SCREW	K
7	SNE2129	SCREW	S
8	RGR0019A-H	REAR PANEL	(E)
8	RGR0019A-J	REAR PANEL	(EB)
8	RGR0019A-I	REAR PANEL	(EG)
9	RGU0030	POWER BUTTON	K
9	RGU0030-S	POWER BUTTON	S
10	RGU0118-K	SPEAKER BUTTON	K
10	RGU0118-S	SPEAKER BUTTON	S
11	RGU0119-K	DIRECT BUTTON	K
11	RGU0119-S	DIRECT BUTTON	S
12	RGU0120-K	SIGNAL BUTTON	K
12	RGU0120-S	SIGNAL BUTTON	S
14	RFKJUV470E-K	CHASSIS ASS'Y	
14-1	RKA0009-1	FOOT	
14-2	XTB3+6J	SCREW	
15	RFKGUV470E-K	FRONT PANEL	K
15	RFKGUV470E-S	FRONT PANEL	S
18	RSQ0004	REC SELECTOR	
19	XTB3+8J	SCREW	
20	SHE187-2	HOLDER	
21	SJS9231A	AC INLET COVER	
22	SNE4021-1	NUT	
23	XTBS3+8JFZ1	SCREW	
24	XTB3+16JFZ	SCREW	
25	XTB3+20JFZ	SCREW	
26	RGQ0006-1	ORNAMENT	K
26	RGQ0006-1S	ORNAMENT	S
27	XTB3+8JFZ	SCREW	
28	XTWS3+8T	SCREW	
29	RGK0097	ORNAMENT(GOLD LINE)	
30	RGK0098-K	SIDE ORNAMENT (L)	K
30	RGK0098-1S	SIDE ORNAMENT (L)	S
31	RGK0099-K	SIDE ORNAMENT (R)	K
31	RGK0099-1S	SIDE ORNAMENT (R)	S
32	RMR0136-K	HOLDER	K
32	RMR0136-S	HOLDER	S
33	RMR0137-K	HOLDER	K

Ref. No.	Part No.	Part Name & Description	Remarks
33	RMR0137-S	HOLDER	S
35	SHR415	LATCH	
36	XTW3+8T	SCREW	
37	RFKNUV470EK1	VOLUME ORNAMENT	K
37	RFKNUV470ES1	VOLUME ORNAMENT	S
38	RFKNUV470EK2	INDICATOR ORNAMENT	K
38	RFKNUV470ES2	INDICATOR ORNAMENT	S
40	SUS800	SPRING	S
		PACKING MATERIAL	
P1	RPG0551	CARTON BOX	K
P1	RPG0552	CARTON BOX	S
P2	SPS5185	PAD (POWER CORD)	
P3	SPS5255-1	PAD (FRONT)	
P4	SPS5256-1	PAD (REAR)	
P5	SPP701	PROTECTION COVER	
		ACCESSORIES	
A1	RQF0718	INSTRUCTIONS MANUAL ASS'Y	(E)
A1	RQF0719	INSTRUCTIONS MANUAL ASS'Y	(EB)
A1	RQF0720	INSTRUCTIONS MANUAL ASS'Y	(EG)
A1-1	RQA0013	WARRANTY CARD	
A1-2	RQCB0169	SERVICENTOR LIST	
A1-3	RFKSUV470E-K	INSTRUCTIONS MANUAL	(E)
A1-3	RQT0706-B	INSTRUCTIONS MANUAL	(EB)
A1-3	RQT0623-D	INSTRUCTIONS MANUAL	(EG)
A1-4	RQCS0009	CAUTION NOTE for FTZ	(EG)
A2	SFDAC05E03	POWER CORD	⚠(E.EG)
A2	SJA193	POWER CORD	⚠(EB)

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